

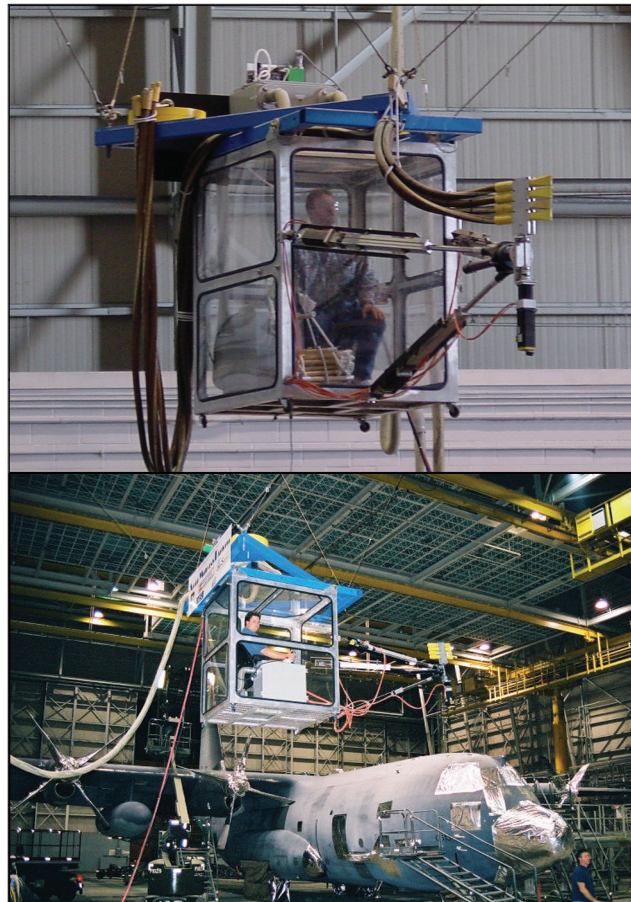


Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

MANTECH'S AMP PROVIDES AIR FORCE DEPOTS A FASTER, SAFER, LESS EXPENSIVE DE-PAINT METHOD



The Aerial Multi-axis Platform (AMP) creates a 40 to 50% reduction in the de-paint flow time and a 70 to 100% reduction in operator stress/injury which results in a 20% reduction in overall cost associated with production paint stripping on large cargo airframes like the KC-135 Stratotanker. Using the current Air Force workload of more than 200 aircraft per year, with an average cost for de-paint of \$200,000 per large aircraft, AMP has the potential to save more than \$8 million per year.



Air Force Research Laboratory
Wright-Patterson AFB OH

Accomplishment

The Manufacturing Technology (ManTech) Division of the Materials and Manufacturing Directorate, with the cooperation of private companies and the Department of Commerce is developing AMP, a revolutionary new process for the stripping, or de-painting, of large airframes like the KC-135 Stratotanker.

Background

The Air Force process for de-painting (stripping) large airframes, such as a KC-135, C-5, and C-17, has always posed problems, especially in accessing every part of the aircraft by workers and their equipment. The existing equipment used for the process is difficult and time consuming to accurately maneuver, causing frequent collisions with the aircraft. Additionally, environmental regulation changes over time have caused increased blasting time, leading to operator fatigue and increased risk of injury.

ManTech managed and co-funded the program under a cooperative agreement with US Technology Corporation, a noted leader in advanced de-painting technologies. US Technology integrated the program, partnering with AeroSystems, a manufacturer of overhead crane systems, who used a technology, called the RoboCrane, developed at the National Institute of Standards and Technology.

US Technology constructed and installed the prototype unit in a production facility at Robins Air Force Base, Georgia. They suspended the RoboCrane from existing hangar ceiling structures by six cables driven by six motorized winches, providing coordinated motion for the enclosed control booth.

The operator can move the sealed booth in six different directions: up, down, forward, backward, right, and left, reducing flow time by eliminating ground-based scaffolding, hoses, and other clutter that inhibits efficient movement and access around the aircraft. AMP will significantly improve the entire working environment of the de-paint program to include required preparation, de-paint and de-prep tasks from the RoboCrane. Controlling the multiple (ganged) nozzles of the manipulator with a joystick, the operator performs the abrasive blasting on large airframes faster, safer, and less costly than before.

For more information on the AMP, please call the Technology Information Center at (937) 255-4689 and refer to item 03-245, or e-mail the center at techinfo@afrl.af.mil.

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (03-ML-46)

Materials and Manufacturing
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